

SEP 25 2008

PATENT APPLN. NO. 10/578,921
RESPONSE UNDER 37 C.F.R. §1.111

PATENT
NON-FINAL

IN THE CLAIMS:

1. (currently amended) A magnetic recording medium comprising a magnetic layer on at least one surface of a film formed from an aromatic polyamide, the film being characterized in that the heat shrinkage ratio in the transverse direction of the film subjected to heat treatment under a condition of no tension for 30 min. at 180 °C is from 1.0 to 2.5%, and wherein the film:

(1) satisfies the following equations (1)-(4) simultaneously, with α_{MD} ($\times 10^{-6}/^{\circ}\text{C}$) and α_{TD} ($\times 10^{-6}/^{\circ}\text{C}$) being coefficient of thermal expansion in the longitudinal and the transverse direction, respectively, and β_{MD} ($\times 10^{-6}/\%RH$) and β_{TD} ($\times 10^{-6}/\%RH$) being coefficient of hygroscopic expansion in the longitudinal and the transverse direction, respectively

$$\text{~~-10} \leq \alpha_{MD} \leq 10~~ \quad -7 \leq \alpha_{MD} \leq 6 \quad (1)$$

$$\alpha_{MD}-10 \leq \alpha_{TD} \leq \alpha_{MD}-3 \quad (2)$$

$$-10 \leq \beta_{MD} \leq 10 \quad (3)$$

$$\beta_{MD}-10 \leq \beta_{TD} \leq \beta_{MD}-3 \quad (4); \text{ and}$$

(2) satisfies the following equations (5) and (6) simultaneously, with E_{MD} (GPa) and E_{TD} (GPa) being Young's moduli in the longitudinal and the transverse direction, respectively.

$$8 \leq E_{MD} \leq 16 \quad (5)$$

$$E_{MD} \times 0.7 \leq E_{TD} \leq E_{MD} \times 1.7 \quad (6);$$

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and wherein the magnetic-recording medium satisfies the following equations (7)-(10) simultaneously, with α' MD ($\times 10^{-6}/^{\circ}\text{C}$) and α' TD ($\times 10^{-6}/^{\circ}\text{C}$) being coefficients of thermal expansion in the longitudinal and the transverse directions, respectively, and β' MD ($\times 10^{-6}/\% \text{RH}$) and β' TD ($\times 10^{-6}/\% \text{RH}$) being coefficients of hygroscopic expansion in the longitudinal and the transverse directions, respectively.

$$\underline{-5 \leq \alpha' \text{MD} \leq 10} \quad \underline{(7)}$$

$$\underline{-5 \leq \alpha' \text{MD} - \alpha' \text{TD} \leq 5} \quad \underline{(8)}$$

$$\underline{-10 \leq \beta' \text{MD} \leq 7} \quad \underline{(9)}$$

$$\underline{-5 \leq \beta' \text{MD} - \beta' \text{TD} \leq 5} \quad \underline{(10)}$$